**IS 281- Joseph B. Cavallaro**

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**Ms. M. Bender, Principal**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class\_\_\_\_\_\_\_\_\_\_

Teacher\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_

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| ***Task: New Swim Team***  ***6.RP.1 – 6.RP.3: Understand ratio concepts and use ratio reasoning to solve problems.*** |  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Math Rubric | | | | | | | Mathematical Operations | 4 | 3 | 2 | 1 | 0 | | Mathematical Errors | 4 | 3 | 2 | 1 | 0 | | Mathematical Explanation | 4 | 3 | 2 | 1 | 0 | | Mathematical Process | 4 | 3 | 2 | 1 | 0 | | Total Score | | | | | | |
| **Directions: Answer each question. Be sure to show your work and explain the process you used to find your answer.** | | |

**Ms. Brown was creating a swim team at the Waverly School. In order to comply with the requirements of the Public School Swim Association (PSSA), the number of boys to the number of girls must maintain a ratio of 16:14. Ms. Brown is thinking about the possible combinations of boys and girls that will meet these requirements.**

1. Give four other possible combinations of boys to girls that will meet the requirements.

A) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ B) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ C) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ D) \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Using words, numbers, or diagrams, explain why your combinations meet the requirements.
2. Brenda is Ms. Brown’s assistant, and she filled out the PSSA application with 40 boys to 42 girls. Will this team be allowed to compete or will they be disqualified? Justify your reasoning.
3. The Waverly Waves swim team is going on a road trip with their top swimmers. The ratio of the number of boys to girls going on the trip is 14:12.

A) If there are 39 athletes traveling, how many girls are there? Use two different strategies to determine your answer.

Strategy 1 Strategy 2

Answer \_\_\_\_\_\_\_\_\_\_\_

1. If 7 more boys join the Waverly Waves, how many girls should be added to the team in order to maintain the same ratio of boys to girls? Justify your answer.
2. The Waverly Waves swim team was shopping for goggles, towels, and swimsuits/trunks. They are trying to spend the least amount of money. After their research, they found two places where they could buy these items.

**Swim Time USA**

|  |  |  |
| --- | --- | --- |
| Goggles | Towels | Swimsuits |
| 12 for $126.00 | 5 for $22.50 | 6 for $108.00 |

**Swim Fashions Outlet**

|  |  |  |
| --- | --- | --- |
| Goggles | Towels | Swimsuits |
| 2 for $22.00 | 10 for $35.00 | 20 for $360.00 |

Does it matter where they purchase each item (goggles, towels, and swimsuits)? Explain your reasoning using words, numbers, or diagrams.

Goggles Towels Swimsuits

1. The team uniform consists of a pair of goggles, swimsuit, and towel. The coach will buy each team member one pair of goggles. If each team member is responsible for the cost of the remaining items, how much will he/she have to pay?
2. The team practices in a pool that is 30 meters long by 20 meters wide. The fastest member on the team completes a lap in 22.5 seconds. How long will it take them to complete a lap in an Olympic-sized competition pool that is 50 meters long by 25 meters wide if each team member swims at the same rate in both pools? (A lap consists of swimming from one end of the pool and back). Show your work.
3. Jack is swimming in the 500m race. It takes him 1 minute and 35 seconds to swim 1 lap in an Olympic-sized pool. How long will it take him to swim the 500m race? (Remember an Olympic-sized competition pool is 50 meters long by 25 meters wide). Show your work and justify your answer.